



Dart Aerospace Ltd.  
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Canada

Tel (613) 632-5200

**D3199-1**

**Job Sheet 170253**



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**Part No:** D3199-1

**Job Qty:** 30 ea

**Part Name:** Bracket



**Part Weight:** 0 lbs

**Status:** Scheduled

**Priority:** High

**Job Created:** 1/12/18

**Job Tracking No:**

**Due Date:** 1/16/18

**Created By:** Jason Leroux

**Type:** SOLD

**Description:**

**Note:** DWG REV E SHEET 1 IPP Rev:C Removed Scribing 05-11-05 JLM IPP Rev:D As per Rev B 06-11-24 JLM  
IPP Rev:E 11.03.31 as per ech 11-531 DD verf:EC

**Ship Via:**

### Bill of Materials

### Job Routing

| Op No | Operation          | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off       |
|-------|--------------------|--------|------------|----------|-----------|---------|-----------------------|-----------|----------------|
|       |                    |        |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |                |
| 90    | Start up Operation | 30 Ea  | 1/15/18    | 1/15/18  | 0.00      | 0.00    | Start Up Waterjet     |           | SC 18/01/18    |
| 100   | Waterjet           | 30 pcs | 1/15/18    | 1/15/18  | 0.00      | 0.89    | Waterjet1             |           | SC 18/01/18    |
| 120   | QC                 | 30 pcs | 1/15/18    | 1/15/18  | 0.00      | 0.00    | QC8                   |           | 38             |
| 130   | Small Fab          | 30 pcs | 1/15/18    | 1/15/18  | 0.01      | 1.32    | Small Fab-3           |           | DA 18-01-17    |
| 140   | QC                 | 30 pcs | 1/15/18    | 1/15/18  | 0.00      | 0.00    | QC5                   |           | 38             |
| 150   | Powdercoat         | 30 pcs | 1/16/18    | 1/16/18  | 0.00      | 0.34    | Powdercoat3           |           | BR 18-01-17    |
| 160   | QC                 | 30 pcs | 1/16/18    | 1/16/18  | 0.00      | 0.00    | QC3                   |           | 38             |
| 170   | Packaging          | 30 pcs | 1/16/18    | 1/16/18  | 0.00      | 0.00    | Packaging3-1          | Stoat     | AT 18-01-18    |
| 180   | QC21-SA            | 30 Ea  | 1/16/18    | 1/16/18  | 0.00      | 0.00    | QC21                  |           | 21 JAN 18 2016 |

Part Op 100 - Cut as per Dwg D3199 Deburr if required

Descriptions: 130 - Form as per dwg D3199 use DT9723

150 - START TIME: 10:20 FINISH TIME: 10:50. 01.11.320° m 136 Sp.

### Job Allocations

| Operation             | Component Part | Required | Inventory | Allocated | Std Qty |
|-----------------------|----------------|----------|-----------|-----------|---------|
| 90-Start up Operation | M304S20GA      | 3        | 191       | 0         | 0       |

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3.4

**DART**  
AEROSPACE  
**S031899**



Bracket

**PART NO: D3199 – 1**  
**Original Serial #: S031899**  
**Revision:**  
**Operation:**  
**Change No:**

**Start up Operation**

01/12/18  
Job No: 170253

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| Part Specifications |             |                                |                |       |                  |
|---------------------|-------------|--------------------------------|----------------|-------|------------------|
| Spec No             | Description | Target/Tolerance               | Limits         | Type  | Special Comments |
| 1                   | Bracket     | 0.210inches + 0.005<br>- 0.001 | 0.215<br>0.209 | 0,211 |                  |
| 2                   | Bracket     | 0.575inches ± 0.010            | 0.585<br>0.565 | 0,575 |                  |
| 3                   | Bracket     | 1.090inches ± 0.010            | 1.100<br>1.080 | 1,083 |                  |
| 4                   | Bracket     | 2.015inches ± 0.010            | 2.025<br>2.005 | 2,016 |                  |
| 5                   | Bracket     | 2.971inches ± 0.010            | 2.981<br>2.961 | 2,975 |                  |
| 6                   | Bracket     | 1.830inches ± 0.010            | 1.840<br>1.820 | 1,837 |                  |
| 7                   | Bracket     | 4.830inches ± 0.010            | 4.840<br>4.820 | 4,834 |                  |
| 8                   | Bracket     | 4.030inches ± 0.010            | 4.040<br>4.020 | 4,032 |                  |

Plex 1/12/18 10:47 AM dart.leroux.jason

| Operation Number                                           | Operation  | Serial Number | Job    | Quantity | Weight | Original Serial Number | Location | Container | Status   | Added     | Special Comments | Label                                                                               | Supplier | Change No |
|------------------------------------------------------------|------------|---------------|--------|----------|--------|------------------------|----------|-----------|----------|-----------|------------------|-------------------------------------------------------------------------------------|----------|-----------|
| <b>Part Number: D3199-1 Revision: Bracket</b>              |            |               |        |          |        |                        |          |           |          |           |                  |                                                                                     |          |           |
| 180                                                        | QC21-SA    | S031899       | 170253 | 22 Ea    | 0      | S031899                | ST022    | Bin       | Stock    | 1/12/2018 | Issue Container  |  |          |           |
|                                                            |            | S033723       | 170253 | 8 Ea     | 0      | S031899                | ST022    | Bin       | On Truck | 1/19/2018 | *                |  |          |           |
| <b>Operation Totals:</b>                                   |            | 2             |        | 30       | 0      |                        |          |           |          |           |                  |                                                                                     |          |           |
| <b>Part Totals:</b>                                        |            | 2             |        | 30       | 0      |                        |          |           |          |           |                  |                                                                                     |          |           |
| <b>Part Number: M304S20GA Revision: 304/316 .040 Sheet</b> |            |               |        |          |        |                        |          |           |          |           |                  |                                                                                     |          |           |
| 100                                                        | Receive sf | S031898       | 170253 | 0 sf     | 0      |                        | MAT020   |           | Stock    | 1/12/2018 | Issue Container  |  |          |           |
| <b>Operation Totals:</b>                                   |            | 1             |        | 0        | 0      |                        |          |           |          |           |                  |                                                                                     |          |           |
| <b>Part Totals:</b>                                        |            | 1             |        | 0        | 0      |                        |          |           |          |           |                  |                                                                                     |          |           |
| <b>Totals:</b>                                             |            | 3             |        | 30       | 0      |                        |          |           |          |           |                  |                                                                                     |          |           |



DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                          |                                                                                                                                                                                    |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                   |                                                                                                                                                                           |                       |                          |                      |                          |
|--------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------|----------------------|--------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                          | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                          |                                   |                                                                                                                                                                           |                       |                          |                      |                          |
| Date :                                                       |                          | Step #:                                                                                                                                                                            |                          | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                   | <b>MRB (QSI042) Approval</b><br><br><br><b>Completed By</b><br><br><br><b>Lead hand / Supervisor Approval Verification</b><br><br><br><b>QC / QA Coordinator Approval</b> |                       |                          |                      |                          |
| <b>Description Work Order Deviation</b>                      |                          |                                                                                                                                                                                    |                          | <b>Disposition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                                   |                                                                                                                                                                           |                       |                          |                      |                          |
|                                                              |                          |                                                                                                                                                                                    |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                   |                                                                                                                                                                           |                       |                          |                      |                          |
|                                                              |                          |                                                                                                                                                                                    |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                   |                                                                                                                                                                           |                       |                          |                      |                          |
| <b>Root Cause</b>                                            |                          | <b>FAULT CATEGORY</b>                                                                                                                                                              |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                   |                                                                                                                                                                           |                       |                          |                      |                          |
| Environment                                                  | <input type="checkbox"/> | No Re-verification                                                                                                                                                                 | <input type="checkbox"/> | Pressure/Forced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <input type="checkbox"/> | Temperature/Cure                  | <input type="checkbox"/>                                                                                                                                                  | Power Loss/Surge      | <input type="checkbox"/> | Positioned Wrong     | <input type="checkbox"/> |
| Design                                                       | <input type="checkbox"/> | Operator                                                                                                                                                                           | <input type="checkbox"/> | Bending                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> | Set-up                            | <input type="checkbox"/>                                                                                                                                                  | Folio/Program         | <input type="checkbox"/> | Outside Dimensions   | <input type="checkbox"/> |
| Doc/Data                                                     | <input type="checkbox"/> | Offset/Setup                                                                                                                                                                       | <input type="checkbox"/> | Centre Not Concentric                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/> | BOM/Route                         | <input type="checkbox"/>                                                                                                                                                  | Grain                 | <input type="checkbox"/> | Over/Under tolerance | <input type="checkbox"/> |
| Equip/Tooling                                                | <input type="checkbox"/> | Supplier                                                                                                                                                                           | <input type="checkbox"/> | Cracks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <input type="checkbox"/> | Broken/Damage/Defect              | <input type="checkbox"/>                                                                                                                                                  | Weld                  | <input type="checkbox"/> | Part Incorrect       | <input type="checkbox"/> |
| Handling/Pre                                                 | <input type="checkbox"/> | Training                                                                                                                                                                           | <input type="checkbox"/> | Crimp/Kink/Ripple/Wave                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <input type="checkbox"/> | Inspection Incomplete/Unqualified | <input type="checkbox"/>                                                                                                                                                  | Wrong Stock Pulled    | <input type="checkbox"/> | Part Lost/Missing    | <input type="checkbox"/> |
| Material                                                     | <input type="checkbox"/> | Use for Testing                                                                                                                                                                    | <input type="checkbox"/> | Cuffs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/> | Contamination                     | <input type="checkbox"/>                                                                                                                                                  | Out of Sequence       | <input type="checkbox"/> | Part Moved           | <input type="checkbox"/> |
| Internal Transport                                           | <input type="checkbox"/> | Poor Information                                                                                                                                                                   | <input type="checkbox"/> | Crushing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="checkbox"/> | Countersink                       | <input type="checkbox"/>                                                                                                                                                  | Off-set               | <input type="checkbox"/> | Drawing              | <input type="checkbox"/> |
| Tribal Knowledge                                             | <input type="checkbox"/> | Rushing                                                                                                                                                                            | <input type="checkbox"/> | Heat Treat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> | Cut Too Short                     | <input type="checkbox"/>                                                                                                                                                  | Mislabeled            | <input type="checkbox"/> | Finish               | <input type="checkbox"/> |
| LOA                                                          | <input type="checkbox"/> | Product Improvement                                                                                                                                                                | <input type="checkbox"/> | Wave/Twist in Tube                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <input type="checkbox"/> | Instructions Incomplete/Unclear   | <input type="checkbox"/>                                                                                                                                                  | Fit/Function          | <input type="checkbox"/> | Misread              | <input type="checkbox"/> |
| Substation                                                   | <input type="checkbox"/> | Process Improvement                                                                                                                                                                | <input type="checkbox"/> | Marks/Chatter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <input type="checkbox"/> | Drill Holes                       | <input type="checkbox"/>                                                                                                                                                  | Misaligned/off center | <input type="checkbox"/> | Turning Sequence     | <input type="checkbox"/> |
| Past Expiry Date                                             | <input type="checkbox"/> | Manufacturing Process                                                                                                                                                              | <input type="checkbox"/> | <b>OTHER :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |                                   |                                                                                                                                                                           |                       |                          |                      |                          |
| Misidentified                                                | <input type="checkbox"/> | Past Due                                                                                                                                                                           | <input type="checkbox"/> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                   |                                                                                                                                                                           |                       |                          |                      |                          |